BAF ARR Opening Meeting

Commissioning/Acceptance of BAF

July 30, 2002

Readiness Philosophy

- Ideal: ARR begins when C-AD management has verified all aspects of readiness
- Practice: ARR is done in parts or in parallel with the C-AD's review process
- 420.2 Guide: "When the contractor's **senior management** determines that the activity is ready to be undertaken, this determination is to be formally communicated to the DOE"

DOE Accelerator Safety Guide

"The purpose of a **Commissioning** ARR is to verify readiness to proceed with commissioning (or the next phase of commissioning). The Commissioning ARR should confirm, to the **extent necessary** to safely proceed with commissioning (or the next phase of commissioning), that construction is **sufficiently complete**, **necessary** construction tests have been performed and accepted, **required** safety-related systems are installed and operational, **relevant** procedures have been approved, and **appropriate** personnel have been assigned and adequately trained."

"The purpose of a **Routine Operation** ARR is to confirm that the facility is **fully ready** for routine operation, including that construction is **complete**, systems are **fully tested** and **operational**, procedures are **established** and operationally verified, staffing is **complete**, and personnel are **fully trained**."

Generic Items Readied for ARR

- Procedures
- Administrative controls
- Personnel training and qualification
- Engineered safety systems
- Specific facilities and sub-systems

Module 1 Mode of Operation

- Beam will originate from either Tandem
  - TVDG MP-6 provides heavy ions of various species
  - Linac provides protons concurrent with operations for BLIP
- Transport lines deliver beam to the Booster
- Booster accelerates beam
- Beam is debunched in the Booster prior to extraction
- Debunched beam pulses are up to 1 second in length
- Beam travels the 100-m beam line to the BAF beam dump

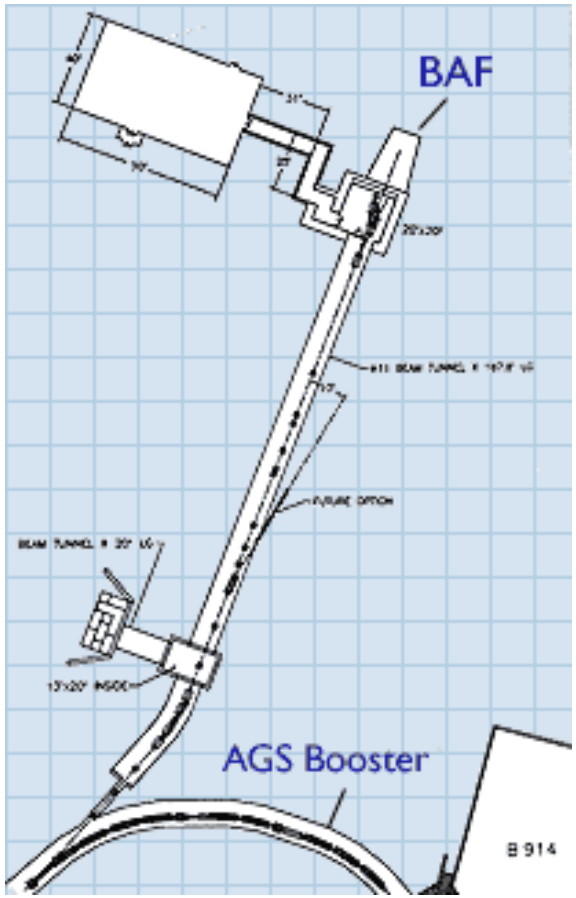
Operational Controls and Safety Systems

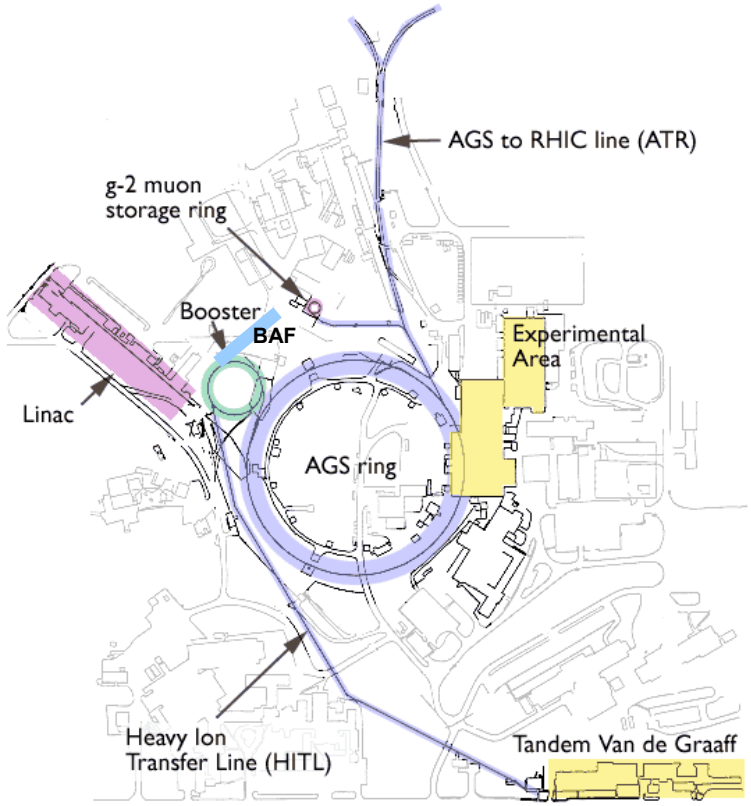
- Controls for the beam will be via the Main Control Room
- Module 1 safety systems include:
  - Beam crash
  - Access control gates
  - Radiation monitors
  - Critical devices
  - Fire alarms
  - Tunnel smoke ventilation system

Specific Facilities

- Experimental Support Building (B958) that contains:
  - Laboratory space
  - Dosimetry control
  - Communication with the MCR
- Power Supply Building (B957) that contains:
  - Magnet power supplies
  - Instrumentation electronics for the beam line
  - Instrumentation electronics for cooling water systems
- The beam line tunnel (B956) that contains:
  - Entry labyrinths
  - Target Room
  - Beam stop

Plan View of BAF and Injectors

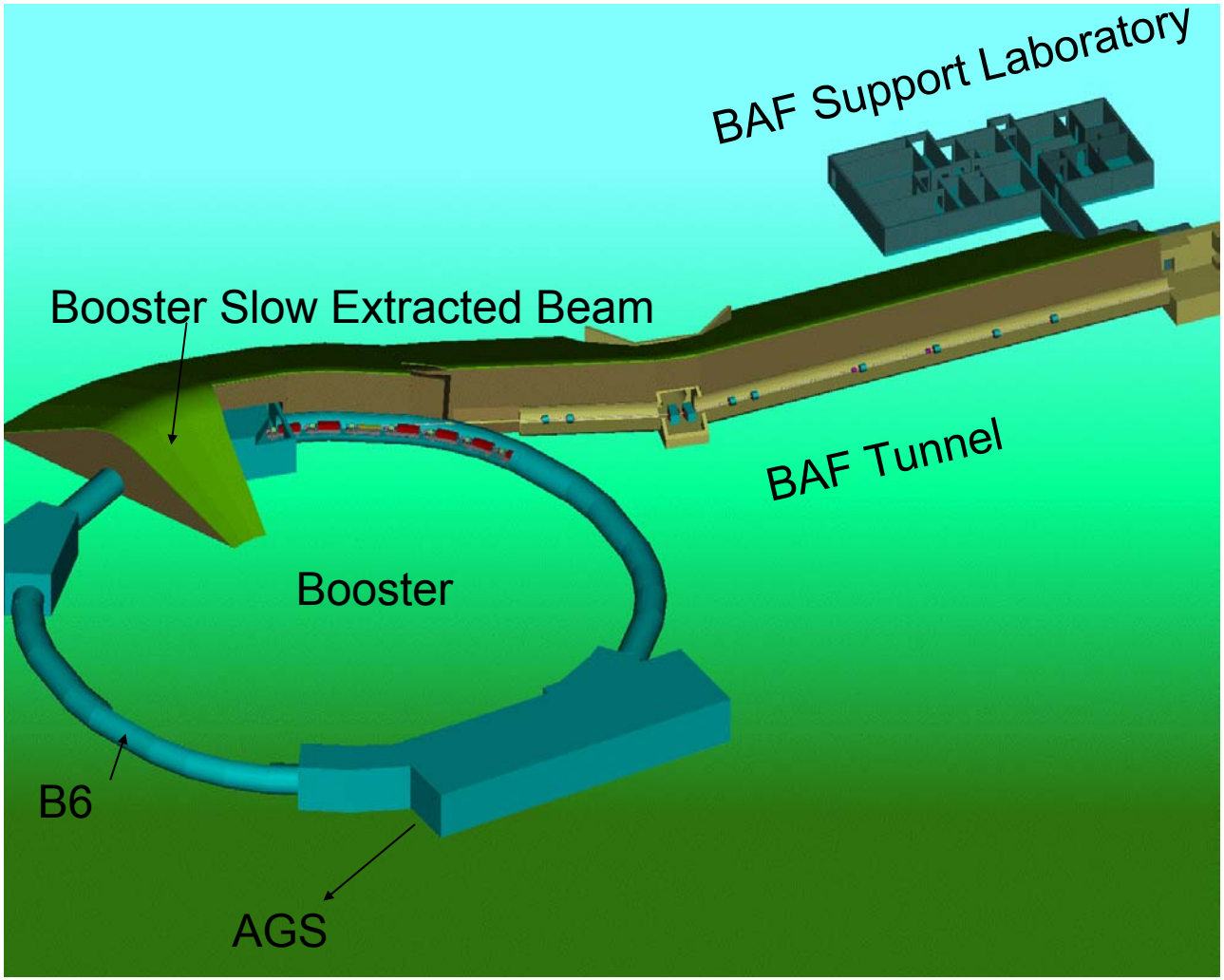




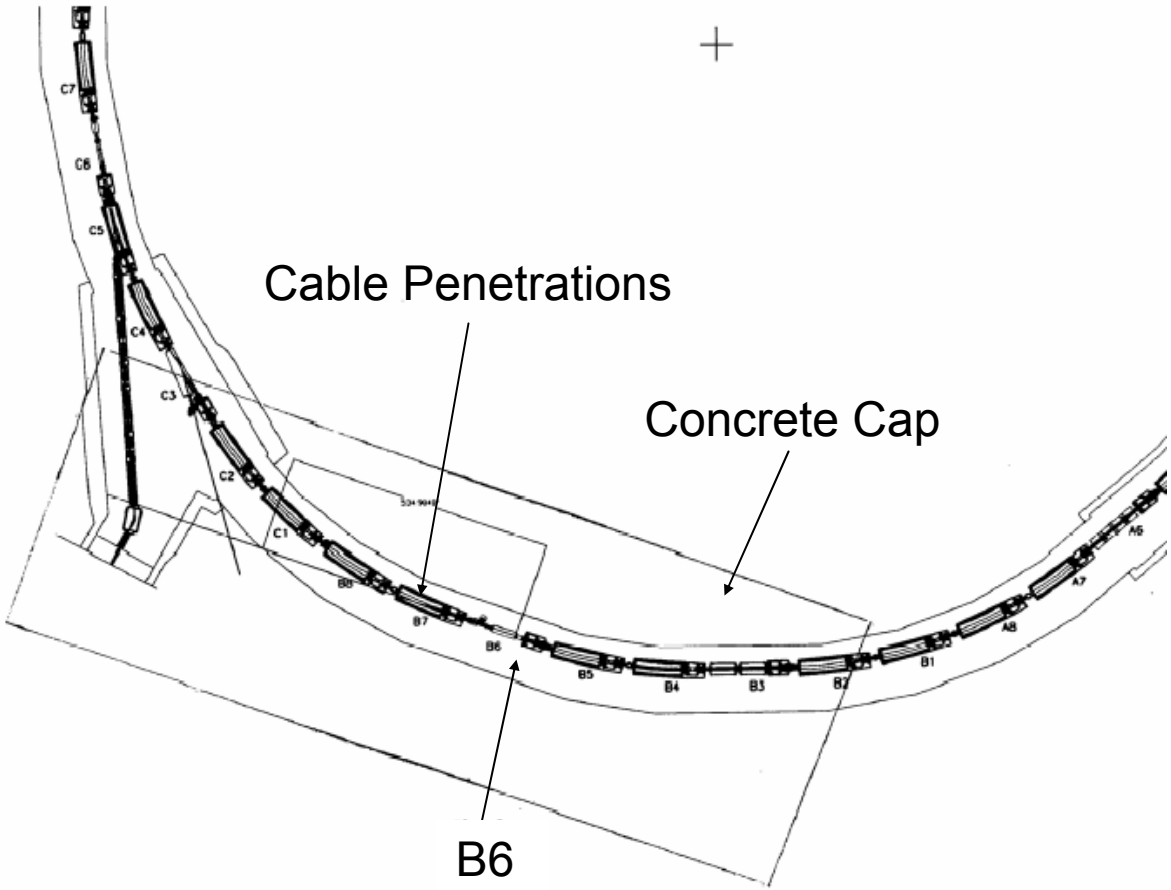
Sub-Systems

- Scheme for Slow Extracted Beam from Booster
- Booster dump and catcher at Booster B Section
- BAF magnets, power supplies, vacuum system
- BAF cooling water systems
- BAF experimental area:
  - System for inserting samples into Target Room
  - System for controlling exposure of samples

Plan View of Booster Changes



Plan View of Booster Concrete Cap



ARR Committee Drivers

- First ARR module starts August 1, 2002
  - C-AD achieves readiness for BAF commissioning
  - ARR committee report by September 1, 2002
  - Earliest commissioning date is > October 7, 2002
- Second ARR module starts January 1, 2003
  - C-AD commissions additional experimental equipment
  - ARR committee report by February 1, 2003
- Third ARR module starts March 1, 2003
  - C-AD achieves readiness for BAF routine operation
  - ARR committee report April 1, 2003

First Module Mission

- Booster extraction equipment commissioned
- Beam ejected into BAF line
- Booster dump/catcher commissioned
- Beam dump at end of BAF commissioned

Construction of Facilities, Module 1

"That construction is **sufficiently complete**, **necessary** construction tests have been performed and accepted"

- Andy McNerney and Dave Phillips will discuss
- ASSRC items discussed by Woody Glenn
- BORE items discussed by Ray Karol

BAF BORE Status, Module 1

- **Building 956**
  - All items closed
- **Building 957**
  - Pre-Occupancy – all closed
  - Post Occupancy – one open (pad CT edges)
  - Recommendations – all closed
- **Building 958**
  - Pre-Occupancy – all closed
  - Post Occupancy – three open (2 FP test records, tray bonding)
  - Recommendations – two open (use of photographic chemicals)

Access Control System, Module 1

"**Required** safety-related systems are installed and operational"

- Critical devices reviewed and approved by RSC
- Neville Williams will discuss

Procedures, Module 1

"**Relevant** procedures have been approved"

- Emergency procedures are not applicable for Module 1
- Appropriate operations procedures (P. Ingrassia)
- Fault Study Plan (A. Rusek)
- RSC Check-Off List (A. Rusek)
- ASSRC Check-Off List (A. McNerney)
- Accelerator Safety Envelope (E. Lessard)
- Sweep procedures (P. Ingrassia)

BAF and Booster Documents

http://www.rhichome.bnl.gov/AGS/Accel/SND/baf_sad.htm

http://www.rhichome.bnl.gov/AGS/Accel/SND/booster_sar.htm

Training and Qualifications, Module 1

- "**Appropriate** personnel have been assigned and adequately trained"
- John Maraviglia will discuss

Training Status for Module 1

- Radiation Worker 1 Training (TLD)
  Status: Staff maintains on an ongoing basis
- C-A Dept Access Training
  Status: Staff maintains on an ongoing basis
- Main Control Room (MCR) Operator Training on OPMs
  Status: Procedures being developed - training to follow
- Review (and sign-off) of current Standing RWP for Radiation Areas
  Status: Staff maintains on an ongoing basis
- Registration (scanning the iris) and Training for Iris Reader Access
  Status: To follow installation but not required for Module 1

Second Module Mission, 1-1-03

- Heavy ions transported to targets
- Experimental equipment and procedures tested

Third Module Mission, 3-1-03

- BAF commences routine experimental running

Next Steps

- Individual meetings
- Tours